Seattle Can Reduce Long Distance and Cellular Telephone Charges

Executive Summary

The City can save over \$110,000¹ by implementing some simple, non-obtrusive policies to ensure that the City does not incur costs for the personal use² of telephones, fax machines, computer modems and cellular telephones and by ensuring that cellular telephones are used efficiently. In our review of departments' policies regarding long distance and cellular telephone charges, we found:

- In 1993, the City spent over \$740,000 for long distance and cellular telephone services³. We estimate at least \$65,000 of this went for personal calls.
- Currently, 30 percent of the City's telephones permit direct dial to any long distance number in the United States and Canada without an authorization code and of these telephones, 10 percent also allow international calls.
- The City can potentially save up to \$45,000 by ensuring that cellular telephones use the most cost effective cellular service calling plans and returning cellular telephones receiving little use to the Department of Administrative Services (DAS) to be made available to other employees with a greater need.

We recommend that departments establish or strengthen their policies and practices on the use of City telephones and cellular telephones to minimize the number and cost of personal calls. The policies and practices should include, at a minimum: (1) requiring authorization codes, such as SCAN codes, to make toll calls, including long distance cellular calls; (2) having employees verify their bills and reimburse the City for personal charges; (3) having supervisors periodically (once or twice a year) review employees' telephone charges; and (4) appointing a department telephone coordinator with the skills, authority and time needed to effectively perform his/her tasks. Each department is responsible for establishing and maintaining a system of management controls, which provide reasonable assurance that City funds and City property are used for City purposes and safeguarded against loss or unauthorized use. Addenda 3 through 8 of the report provide information to assist departments in developing or strengthening their own policies and guidelines on the use of office equipment.

¹See page 2 of report for methodology.

²In accordance with SMC 4.16.070(2)(b) and Seattle Ethics and Elections Commission opinions, we define business related calls as calls made in support of policies contained in ordinances and calls which a reasonable person would consider to be for City purposes, including the activities of professional and governmental associations.

³Of the \$740,000, about 46 percent went for long-distance calling, an average of about \$90 for each employee with authorization to place long distance calls. The remaining 54 percent went for cellular telephone usage, costing an average of about \$450 per cellular telephone.

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Purpose

We conducted this review to determine whether stronger policies and practices could save the City money on long distance and cellular telephone charges and to advise departments on ways to strengthen management controls over City telephones without adding burdensome or costly procedures.

Background

In 1993, the City spent over \$740,000 for long distance and cellular telephone services. About 46 percent of the \$740,000 went for long distance calling, an average of about \$90¹ for each employee with authorization to place long distance calls. The remaining 54 percent went for cellular telephone usage, an average of about \$450 per cellular telephone.

The City operates its own private telephone system, which it installed in 1987, after having previously contracted for U.S. West's Centrex Service. According to the Department of Administrative Services (DAS), by operating its own system, the City has saved money and added a great deal of flexibility to its telephone services. However, operating its own system makes the City legally liable for the costs of any fraudulent telephoning from its system. If an unauthorized individual discovers how to access the City's system and then places fraudulent long distance calls, the City will have to pay for these calls. Nationwide, inadequate control of calling privileges and of physical access to switching systems costs owners of private systems in excess of \$500 million annually from telecommunications fraud. In the last few years, several companies in the Northwest have reported significant toll fraud occurring on their systems.

The City's telecommunications system is one of the largest private systems in the Northwest. DAS, through its Communications and General Services Division, manages the system as a service provider to other departments. The division provides a full range of telecommunications services, including telephone and related voice services, two way radio systems, cellular telephones and pagers and support for the transmission networks that deliver these and other services. The division has taken a strong leadership role in enhancing the City's telecommunications capabilities since its inception. Addendum 1 highlights some of these efforts.

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¹See below for methodology.

In conducting this review, we interviewed DAS officials and telephone coordinators at each City department. We also reviewed written departmental policies on the use of City telephones and cellular telephones.

To review long distance telephone usage, we examined the July 1993 bills for:

- all telephones within one small department (under 100 employees);
- all 76 of the City's telephones with at least one long distance telephone call costing over \$10; and
- all 16 of the City's telephones with 10 or more calls to the same long distance number, but no single call costing over \$10.

We also examined the bills for all 29 of the City's telephones that originated at least one international call during the months of July, August, or September 1993.

To review cellular telephone usage, we examined a sample of cellular telephone bills by:

- obtaining from DAS a listing of all the cellular telephone numbers with their total cellular charges for December 1993; and
- selecting the bills for every tenth cellular telephone number in the listing and every number whose bill was over \$125.

For both the long distance and cellular telephone numbers in our samples, we asked the telephone coordinators to work with employees associated with the telephone number to identify which of the calls on their bills were for City business and which were for personal use. We verified some of the information employees provided.

We also reviewed the City's inventory of cellular telephones by collecting cellular telephone inventories from both DAS and individual departments.

We conducted a limited review of the controls which DAS has in place to protect the entire telephone system from attacks by computer hackers. We toured several of the system's switching facilities and discussed with departmental staff various controls which the Northern Telecom publication, <u>Controlling Access Privileges</u>, recommends for systems like the City's. We did not independently verify the information DAS provided.

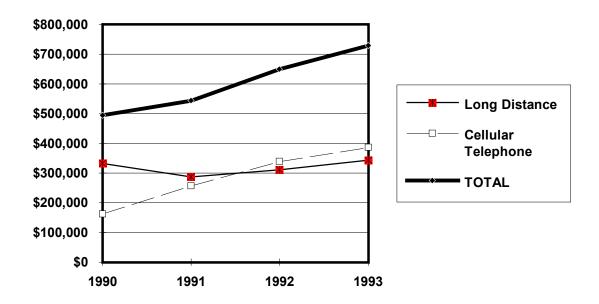
We conducted this review between January and July 1994, in accordance with generally accepted government auditing standards. We estimated Citywide usage, costs and potential savings based on our sample. However, since our samples were not randomly selected, a sampling error cannot be determined from the extrapolation. Also, the period of December 1993, which we used to select our sample of cellular telephone calls; the long distance calls in July 1993; and the international long distance calls in July, August and September may not be representative of other periods.

Telecommunications Charges Have Increased Significantly

Between 1990 and 1993, the City's telephone expenditures increased from about \$495,000 to over \$740,000, an increase of about 50 percent. As Graph 1 shows, most of this increase was due to the dramatic increase in the use of cellular telephones. During this period, charges for cellular telephone calling increased from about \$163,000 to about \$398,000, an increase of about \$235,000 or 145 percent. In contrast, long distance telephone charges increased by about \$11,000 or three percent. Addendum 2 provides details on the rise in City telephone expenditures.

Graph 1

Long Distance and Cellular Telephone Billings
City of Seattle
For the Period 1990 - 1993



Personal Calling Accounts for Eight to Ten Percent of Charges

Our review of a sample of telephone bills suggests the City can cut its long distance and cellular telephone charges by over \$65,000, by reducing the amount of personal calls that occur and by ensuring that employees reimburse the City for personal calls. We asked telephone coordinators to identify personal charges in our sample of long distance and cellular telephone bills. In most cases, the telephone coordinators, in turn, asked the employees to make the identification. Employees identified over eight percent of the

cellular charges and ten percent of long distance calls as personal. We regard these numbers as conservative because:

- virtually no employees identified any of their incoming cellular telephone calls as
 personal and the nature of the billing information made it impossible to identify
 where an incoming call originated, and
- in some cases, we were able to identify outgoing personal calls that were made by employees, but not identified as such.

Departments Could Improve Their Review of Telephone Charges

We found that departments can save money by ensuring that both supervisors and employees who place calls review telephone bills to identify personal calls and erroneous charges. Several departments have already had some significant success in reducing costs through more thorough reviews of telephone bills.

- In 1993, as a result of reviewing its bills, the Water Department received over \$2,500 from employees for personal calls made, including over \$400 from one employee for making nearly 200 personal calls on a cellular telephone. The employee was suspended from work for using a City cellular telephone solely for personal use. Review of its 1993 telephone bills also led the Water Department to discontinue the leasing of underutilized cellular telephones.
- In the Fire Department, the telephone coordinator has saved over \$3,000 for the City and over \$30,000 for his department since February 1993 by identifying disconnected telephone circuits, for which vendors were still billing the City, and billing errors, such as charges for telephone equipment and services belonging to other departments.
- In the Legislative Department, which distributes copies of telephone bills to its employees for review, an employee identified erroneous long distance telephone charges on his March 1994 billing. As a result, DAS discovered a significant error in its billing system; the system was billing calls made from a City telephone to a local cellular telephone as long distance calls when the first three digits of a cellular telephone number were identical to a long distance area code. DAS will modify the system to prevent future recurrence of this problem.

While some departments provide a copy of long distance and cellular telephone charges to the employees who make the calls, many departments do not. DAS provides each department with a telephone bill for each of its telephones showing the long distance numbers called, the date, start time and length of the call and other billing details. Employees who do not receive a copy of their telephone bills do not have the opportunity to verify calls they made. Such verification provides an important protection against

erroneous charges and against misuse of the City's telephone system by unauthorized individuals, such as telephone hackers.

In addition to employees verifying calls, review by managers and supervisors helps ensure identification of all personal calls. However, in some departments this review is not taking place. Based on our efforts to identify personal calls during this audit, we believe that in addition to employee identification of personal calls, departments need managers and supervisors to periodically review telephone bills. During our review, we sent over 200 bills to departments with a request that telephone coordinators ask employees to identify any personal calls. In addition to the calls which employees identified as personal, we found that a cursory review of telephone bills could identify additional calls which were either clearly personal or in need of further clarification.

- One cellular telephone bill with 13 calls came back to us with a note from the department's telephone coordinator that all the calls were probably for official business. We determined that 10 of the calls were for personal reasons.
- Another cellular telephone bill we reviewed included three calls to the same number on the same day totaling 110 minutes. The remaining 55 calls made from this cellular telephone during December 1993 averaged under three minutes in length. The department's telephone coordinator returned this bill to us with no indication that the three lengthy calls were for other than official business. When we questioned these calls, she told us she believed the calls made were for official business because she knew the person who used that telephone. However, we determined that the cellular telephone was mounted in a truck and used by different employees. The telephone number in question belonged to a personal residence who had no business with the department.

In some departments, managers and supervisors are not reviewing telephone bills and, in some cases, are not even receiving copies of telephone bills. Some managers see no reason to review bills because by the time they reach the managers, having passed through the department's financial division and telephone coordinator, the bills are old, and the department has already paid them.

Department officials have told us that the large amount of documentation they receive from DAS impedes their ability to monitor telephone usage. For example, the report which the Engineering Department receives is about six inches thick. To address this concern, DAS is working on transmitting information to departments digitally via computer; this would allow departments to extract and analyze the relevant information.

Authorization Codes Provide Greater Security

City departments have the ability to control telephone access by restricting the ability of each telephone to place toll calls without an authorization code and by limiting the ability of individuals with authorization codes to calls within certain geographical areas. The

authorization code through which the City permits employees to make long distance calls is known as a State Controlled Area Network (SCAN) authorization number. The SCAN is the State of Washington's private communications network. Use of an authorization code can also ensure that employees are using the least expensive long distance calling method.

Limit Telephones to City Network and Local Calls

Departments can reduce the risk of unauthorized long distance charges by programming each of its telephones to provide access to City network and local calls only, except when the user provides a valid authorization code for making long distance calls. Requiring each employee to use an authorization code facilitates identifying the employee making a call, limits the locations to which the employee can make long distance calls and permits billing the charges to the user's official telephone.

As Table 1 shows, 30 percent of the City's telephones permit anyone to direct dial, without an authorization code, any long distance number in the United States and Canada, and of these telephones, 10 percent also allow international calls. All the City's 880 cellular telephones, as reported by DAS, can make long distance calls without an authorization code.

Table 1: Calling Restrictions On City Telephones²

Areas Telephones Can Direct Dial Without An Authorization Code	Number of Telephones	Percentage of Total
Limited to City Network and Local calls	4,959	63%
Limited to 206 area code	590	7%
The United States and Canada	1,556	20%
International calls and the United States	762	10%
Total Number of City Telephones	7,867	100%

The 762 City telephones which permit direct dialing of international calls anywhere in the world, in particular, need much tighter dial access controls. Although we found no evidence of abuse, allowing direct dial international calls on City telephones increases the risk for abuse. Restricting City telephones from making international calls without an authorization code would impose little burden on employees; we found that City employees rarely make international calls. During July through September 1993, for example, only 29 employees Citywide made international calls and all these calls were to Canada. Employees whose work requires them to make international calls can obtain an authorization code which allows them to do so. In special cases where an employee

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²Does not include cellular telephones.

without an authorization code needs to make an international call, the City operator can place the call for him/her.

Restricting Authorization Codes to Geographic Areas
Needed To Accomplish Duties

City departments are not periodically reviewing authorization code restrictions to ensure that employees have only the level of access which their duties require. Access levels determine the locations to which an employee can place long distance calls. City departments are responsible for controlling the level of long distance dialing access provided in each employee's authorization code and for revoking or adjusting access when employees terminate or change responsibilities. As Table 2 shows, although some employees have authorization codes which limit their long distance dialing to Washington State or to the Pacific Coast states, Idaho and Montana, these employees represent only one and two percent of all employees with authorization codes, respectively.

Table 2: Geographic Restrictions on Authorization Codes

SCAN Access Level	Number of Employees with SCAN	Percentage of Total
Washington State Only	46	1%
Washington, Oregon, Idaho, Montana and California	82	2%
The Continental U.S. including Alaska, Hawaii and Canada	3,418	92%
The Continental U.S. and all International Numbers	171	5%
Total	3,717	100%

Review of Cellular Telephones Could Improve Utilization and Save Costs

Review of cellular telephone usage could lead to improved utilization and cost savings up to \$45,000 by providing cellular telephones now receiving little use to other employees with a greater need, by selecting alternative methods of communication for high use telephones and by selecting the most economical calling plan for each telephone.

<u>Unused and Under Used Cellular Telephones</u>

As Table 3 shows, our review of telephone usage for the 132 cellular telephone bills in our sample found that:

- Nineteen (19) cellular telephones, or 14 percent, received no use at all.
- Twenty-six (26) cellular telephones, or 20 percent, received an average of less than one minute a day of utilization.

<u>Table 3: Average Daily Airtime Minutes Used For 132 Cellular Telephones During December 1 - 15, 1993</u>

Average Cellular Airtime Used A Day	Number of Telephones	Percent of Total
Not used at all	19	14
Less than one minute	26	20
1 to 2 minutes	10	8
Over 2 minutes to 4 minutes	6	4.5
Over 4 minutes to 20 minutes	44	33
Over 20 minutes to 60 minutes	21	16
Over 60 minutes	6	4.5
Total	132	100%

Our sample results suggest that 123³ of the City's 880 cellular telephones go unused during a two-week period. According to DAS, many of the City's cellular telephones with low usage are for emergency purposes, which explains their low usage. However, low cellular telephone usage may indicate that an employee does not really need the telephone, and this becomes more likely in the absence of a needs assessment process prior to acquisition. During our review, we found no evidence that departments conduct a formal needs assessment before acquiring cellular telephone equipment and service. If an employee does not really need the cellular telephone the department has assigned him/her, the department can reassign the cellular telephone to another employee with a greater need or, if the telephone is leased from DAS, return the telephone to DAS for use in another department and canceling DAS' leased services.

Our review of 132 cellular telephone bills for calls made in December 1993 found one instance of a cellular telephone which was no longer in use but for which Cellular One was still providing and billing the City for voice mail service. This occurred because either the department or DAS failed to cancel the unneeded service. Only after we informed DAS and the department of our finding in March 1994 was the voice mail service on this cellular telephone canceled.

Alternatives to High Utilization of Cellular Telephones

Savings may also be available in regard to highly used cellular telephones. For example, departments could choose to communicate with employees in the field by using digital or alphanumeric display pagers. Some employees with cellular telephones already minimize costs by using pagers to receive all incoming calls and by returning all but emergency calls on non-cellular telephones. In 1993, DAS leased pagers to departments for \$14 to \$20 a month.

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³See page 2 for methodology.

It is important to note that large cellular telephone bills do not inherently suggest misuse. For instance, one department has several employees who consistently have cellular telephone bills over \$300 a month due to numerous, short telephone calls associated with the nature of their work. Since these employees received cellular telephones, that department has been able to reassign an operator who previously relayed telephone messages to these employees. However, large cellular telephone bills require extra scrutiny by employees and their supervisors to ensure that personal usage is minimal; that all personal and unauthorized calls and erroneous charges are identified; and, if personal calls are made, that employees reimburse the City for the cost of these calls.

City Can Save Up To \$45,000 By Tailoring Calling Plans

The City can save up to \$45,000⁴ on cellular telephone costs by periodically reviewing usage and selecting for each of their cellular telephones the calling plan which best fits the normal usage of that telephone. Three different rate plans for cellular telephones are available to departments through City contracts with two major cellular service providers, Cellular One and US West Cellular. Depending on the amount of cellular airtime used, the structure of these fees and charges makes one plan more preferable and cost effective over the others. Table 4 shows the rates for each plan, which vary in monthly fees and charges per minute of airtime.

<u>Table 4: Monthly and Per Minute Charges For City's Cellular Service Plans With Cellular One and US West Cellular</u>

<u>Cellular</u> <u>Service Plan</u>	Monthly Access Fee	Amount of Free Time	Peak Hour ⁵ Costs Per Minute	Non-Peak Hour Costs Per Minute
Cellular One's Government Low-Use Plan	None	None	\$0.28	\$0.10
Cellular One's Government High-Use Plan	\$15.00	None	\$0.23	\$0.13
US West Cellular	\$7.95	30 minutes	\$0.28 (After 30 minutes)	\$0.075

Each of these plans is the most economical depending on the amount of time a cellular telephone is used. Based on peak hour use:

• Cellular One's Government Low-Use Plan is the most economical if the telephone is used less than 28 minutes.

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⁴See page 2 for methodology.

⁵According to a manager in DAS' Communications Division, peak hours are generally between 7:00 a.m. to 7:00 p.m.

- US West Cellular's Plan is the most economical if the telephone is used more than 28 minutes and less than 309 minutes.
- Cellular One's Government High-Use Plan is the most economical if the telephone is used more than 309 minutes a month.

Our review of airtime usage during December 1993 for 132 cellular telephones found a clear opportunity for significant savings through selection of the optimum plan. As Table 5 shows, out of the 132 cellular telephones reviewed, 37 telephones, or 28 percent, used over 300 minutes of airtime and were on Cellular One's Government Low-Use Plan. If these 37 telephones had been using Cellular One's Government High-Use Plan instead, the City would have saved at least \$495 in airtime charges incurred during December 1993, excluding taxes.

<u>Table 5: City Cost Savings Lost During December 1993--Based on A Review</u> Of 132 Cellular Telephones

<u>Description</u>	Number of Telephones	Percent of 132 Cellular Telephones	Cost Savings Lost
City funds lost by using Cellular One's Government Low-Use Plan rather than it's Government High-Use Plan	37	28%	\$495.95
City funds lost by using Cellular One's Government High-Use Plan rather than it's Government Low-Use Plan	3	2.3%	\$24.63
City funds lost by using US West Cellular's Plan rather than Cellular One's Government Low-Use Plan	2	1.5%	\$8.95
Total	42	31.8%	\$529.53

DAS is currently negotiating with Cellular One to have cellular telephones automatically switched to the most economical calling plan each month.

<u>Discrepancies Found In Inventory of Cellular Telephones</u>

Discrepancies exist between the central inventory of the City's cellular telephones and the inventory information within departments. Discrepancies between DAS' inventory and the departments' contributes to a number of problems we found with the City's management of cellular telephones, including several cellular telephones being billed to the wrong department and the City being billed for cellular service it no longer uses.

DAS maintains a central inventory of all of the City's cellular telephones. DAS provides copies of cellular telephone inventories to departments upon request. In addition, DAS can provide departments the following information for each cellular telephone: the type, telephone, and serial number assigned; City department assigned the telephone; the name of person using the telephone, if available; whether the telephone is owned by the department or leased through DAS; and the organization code identifying the department being billed for the cellular telephone.

As of March 1994, DAS' inventory reported that the City owns 880 cellular telephones. However, we surveyed all City departments and found that departments report only 716 of those cellular telephones in their inventories; they also had 84 that were not on DAS' list. Furthermore, DAS had 164 cellular telephones that were not on departments' lists -- a total discrepancy of 248 cellular telephones. According to DAS officials, 44 of the 880 cellular telephones reported by DAS' inventory are inventory spares or in repair. We could not reconcile the department's cellular inventories with DAS' inventory. See Addendum 5 for a comparison of DAS' cellular inventory with City departments' inventories

The discrepancies between DAS' cellular telephone inventory and departments' inventory may result in part from the present procedures for acquiring cellular telephones. According to DAS staff and departmental telephone coordinators, an employee may obtain a cellular telephone by submitting a request in writing to DAS. The request must contain the signature of the employee's manager, supervisor or telephone coordinator showing approval. Although the telephone coordinator is generally responsible for maintaining the department inventory of cellular telephones, the coordinator may not be aware when an employee of the department has requested and obtained a cellular telephone unless the telephone coordinator provides the signature of approval. Furthermore, unless the telephone coordinator reviews cellular telephone bills against the departmental inventory, the coordinator is likely to remain unaware of the additional department cellular telephone on the DAS inventory. Some of the discrepancies may also result from departments' not informing DAS of lost or discontinued cellular telephones.

Some Written Policies Exist

Some City departments have written policies on the use of City telephones and/or cellular telephones. In addition, the Ethics Commission has issued opinions stating that an employee making more than minimal use of the City's long distance and cellular telephone services for personal purposes would be violating the City's Code of Ethics. Table 6 and Table 7 show examples of written policies and practices governing employee use of City telephones and cellular telephones, respectively. Addendum 6 provides examples of various written policies, which are fairly typical of the written policies we found.

<u>Table 6: Examples of Departments' Written Policies and Practices Relating To Employees Use of City Telephones</u>

City	Examples of Departments' Policies and Practices Relating To Employees Use of City Telephones
Department	
Administrative Services	Prohibits the use of City telephones for personal long distance calls. (DAS policy number II.1.0, dated October 26, 1983.)
City Light	Encourages employees to place all business-related long distance and local toll calls on SCAN. Personal long distance and local toll calls should be made from a private or pay phone. Emergency long distance calls that must be placed from an office telephone are to be charged to an employee's home telephone or personal calling card number. (Memo dated August 17, 1989.)
Economic Development	Distributes the telephone bill to employees on a monthly basis to identify personal calls and make reimbursements.
Engineering	Solid Waste: Prohibits personal long distance calls. Employees should write a personal check to the City to reimburse personal calls. Supervisors will refer telephone bills to employees for verification that any long distance charges are business related. (Memo dated March 29, 1994.) Transportation: Desk telephones are to be used for official City business. Telephones may be used for personal local calls during non-paid time and scheduled breaks. Employees should charge personal long distance calls to their personal credit card or calling card number. In certain instances, an employee can obtain permission from his/her manager or supervisor to use SCAN to place a personal long distance call, provided the employee agrees to reimburse the City for the charges. (Policy dated March 28, 1994.)
Fire Department	Fire Department telephones shall not be used for personal calls. Telephones may be used for outside calls regarding Fire Department business only. Each direct dial long distance telephone call shall be reported via a memo to Communications, and memo shall be approved by a first line supervisor prior to submission. (Fire Department's Procedures Manual, Section 213.)
Law Department	Prohibits the use of SCAN or other City billing for personal long distance calls. (The Civil Tongue Newsletter dated November 29, 1993.)
Legislative Department	Personal long distance calls should never be billed to the City. Reminds employees via memo to use their SCAN authorization number for faxing long distance and making long distance calls. Monthly telephone bills are distributed to Councilmembers and managers for review. (Memo dated October 1, 1993.) Managers are asked to distribute bills to staff for review. Employees are requested to submit a check payable to the City of Seattle for personal long distance telephone calls. (Memo dated July 25, 1994.)
Licenses and Consumer Affairs	Prohibits personal long distance calls on department telephones. If an employee's only choice is to use a departmental telephone, he/she must make restitution to the department's telephone coordinator at the earliest possible time. (Memo dated July 9, 1993.)
Mayor's Office	Distributes telephone bills to employees to identify personal calls and incorrect billing charges. Employees reimburse the City for cost of personal calls. (E-mail dated December 20, 1993.)
Personnel	Prohibits personal long distance calls charged to the department. Employees should charge these calls to their home telephone or personal credit card. Requires employees to log all long distance and SCAN directory assistance calls and submit the log to the department's Fiscal Unit. Supervisors are required to approve logs prior to submission. (Memo dated September 2, 1992.)
Police	Employees shall use SCAN for long distance calls whenever possible. Employees shall obtain approval from their supervisors before making a long distance call. Supervisors shall maintain records of long distance calls; review telephone bills and all calls to assure they were authorized; sign telephone billings; and return billings to Fiscal. (Policy: Seattle Police Department's Procedures Manual, Section 1.10.032.)
Water	Prohibits personal long distance calls billed to the City. In an emergency, if an employee does not have a personal credit card, he/she should inform his/her supervisor that a personal long distance call was made. Personal calls should not be made during paid work time. (Memo dated December 13, 1993.)

<u>Table 7: Examples of Departments' Written Policies and Practices Relating To Employees Use of Cellular Telephones</u>

City Department	Examples of Departments' Policies and Practices Relating To Employees Use of Cellular <u>Telephones</u>
Administrative Services	Prohibits personal use, except in an emergency or when working late and family must be notified and a non-cellular telephone is not readily available. (Memo dated September 29, 1993.)
City Light	Allows occasional personal use with marginal cost to City. Prohibits personal calls, except in an emergency or to inform family of unplanned overtime or work expectation. Supervisors and employees review invoices and sign showing approval. (Memo dated July 7, 1994.)
Construction and Land Use	Enforcement Division: Prohibits personal use. Requires that cellular telephone numbers not be given out to people outside DCLU, unless authorized by manager. (Memo dated August 16, 1993.) Housing/Zoning Division: Prohibits personal use. Cellular telephones are assigned on a first come first served basis. Employees are not allowed to take cellular telephones home without a unit manager's approval. (Memo dated July 26, 1993.) Construction Inspection: Personal calls are not allowed except in emergencies. Requires employees to limit length of calls to a reasonable amount of time. Except for personal emergency contacts, prohibits giving cellular telephone numbers to people outside the department without manager approval. (Memo dated April 20, 1993.)
Engineering	Engineering Services: Cellular telephones are to be used when a non-cellular telephone is not conveniently accessible. Users will receive a copy of monthly calls for review, when available, and are expected to volunteer information on personal calls. If personal calls are made, employees are required to write a check payable to the City and submit a check to Accounting. (Effective January 1, 1994) Drainage and Wastewater: Cellular telephones are to be used when a non-cellular telephone is not conveniently accessible. The Field Manager is responsible for monitoring monthly cellular telephone usage and will discuss with supervisors usage that appears above typical usage. Users will receive a copy of monthly calls and are expected to volunteer information on personal calls made. (Effective January 2, 1994.) Solid Waste: Personal calls on cellular telephones should be for emergency situations only. Long distance calls must be for City business. Conversations should be kept short, and calls should be made from a regular telephone whenever possible. Supervisors will refer telephone bills to employees for verification that cellular calls are business related. Employees should write a check to the City to reimburse the department for any personal calls. (Memo dated March 29, 1994.) Transportation: Cellular telephones should be used for City business only and should not be used for personal calls, except in cases of emergency. Employees are required to reimburse the City for all personal calls. (Memo dated March 28, 1994.)
Finance	The department's telephone coordinator reviews monthly telephone bills. Telephone bills are sent to the department's accounting division and each division director. Division directors are responsible for monitoring telephone bills. Telephone bills are not monitored for personal calls.
Fire	Strictly prohibits personal calls. The Assistant Fire Chief reviews cellular telephone bills. (Fire Department's Procedures Manual, Section 213.)
Department Housing and Human Services	Housing Division: Prohibits personal use. Requires employees to reimburse the City for any personal calls. (Memo dated March 16, 1993.)
Water Department	Prohibits personal use. Draft guidelines allows personal use for emergencies or to notify family of work schedule changes. Also states that telephones are assigned to job functions, not employees. (Memo dated December 13, 1993 and draft guidelines dated April 1993.)

Controls to Prevent Telecommunications Fraud

By owning its own PBX system, the City is liable for all long distance charges originating from the City's PBX system. If an unauthorized individual gains access to the City's system, the City will have to pay for all charges incurred by that individual. The three primary motivations for gaining unauthorized access to a PBX systems are (1) computer hackers who like the challenge; (2) individuals or groups who want to steal long distance access to avoid charges; and (3) individuals or groups who want to place calls through the City of Seattle to disguise the location of their calls. Highly sophisticated and skilled syndicates search for vulnerable PBX systems and then re-sell access to the system to others. Though a group may only be able to gain unauthorized access to a PBX system for a limited amount of time before being detected and cut off, a Telecom & Network Security Review publication reports that the median loss is \$90,000 and that some companies have lost over \$1 million.

The City has not had a problem with telephone fraud from computer hackers. In our discussion with DAS, we found DAS staff to be well aware of the potential for telecommunications fraud and are taking many steps to prevent its occurrence here. Some of the most important steps DAS has taken to prevent telecommunication fraud include:

- restricting call forward to long distance exchanges;
- restricting direct inward system access;
- restricting long distance dialing through meridian mail; and
- locking entry ports after four failed log-on attempts.

However, DAS could add several additional controls which would further protect the City's telephone system. In addition to DAS' current controls, Northern Telecom⁶ recommends in their publication, <u>Controlling Access Privileges</u>, the following controls to prevent telecommunications fraud:

- DAS could establish a team responsible for reviewing system security and regularly reviewing system vulnerabilities; and
- the system could restrict international calls (see above, page 7).

In addition, Northern Telecom recommends programming telephone systems to identify calls over a certain duration, so that DAS system personnel can review them. DAS' management system does not have this capability; however, DAS officials hope to acquire this capability within two years.

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⁶Manufacturer of the City's telephone system.

DAS staff told us that the department needed to review the adequacy of the following controls which the department has in place:

- reporting system variances;
- making frequent system password changes;
- identifying all persons entering switching rooms;
- restricting use of call forwarding to make long distance calls; and
- restricting unauthorized access of the City's central system from City Light's smaller independent telephone system.

Recommendations

The City can save over \$110,000 by implementing some simple, non-obtrusive policies and guidelines to ensure that City does not incur costs for the personal use of telephones, fax machines, computer modems, and cellular telephones and by ensuring that cellular telephones are used efficiently. We recommend that each department establish written policies and guidelines that provide reasonable assurance that City telephones and cellular telephones are used only minimally for personal calls and that employees reimburse the City for all personal charges. The policies and guidelines should include: limiting direct dial access; requiring employees to verify their telephone bills and reimburse the City for personal calls; directing managers and supervisors to periodically review employee telephone usage; and maintaining controls over cellular telephone inventory records. We recommend that each department consider the following when preparing their policies and guidelines.

Restricting telephones, including cellular, to City network and local telephone service

Restricting telephones to City network and local telephone service without an authorization code does not place a great burden on employees and can save the City money. However, it does add security and accountability to the City's telephone system. Employees can be assigned an authorization code number to use in order to place long distance calls. Then, unauthorized individuals can not place long distance calls on City telephones. Also, when employees need to make long distance calls from other city telephones, the use of an authorization code helps facilitate tracing and billing the call back to the individual placing the call. The departments may want to make exceptions for certain employees (for example, 911 dispatchers) whose work would be hindered by requiring the use of an authorization code and whose telephones are not likely to be used by unauthorized individuals.

- Employees keeping personal toll calls to a minimum⁷ and reimbursing the City for them (including taxes and administrative charges)

 Although occasionally personal toll calls may be necessary as employees balance their work obligations with personal and family obligations, departments should establish reasonable policies that keep personal toll calls to a minimum⁷ and require
- **Distributing all monthly telephone bills to employees for verification**Employees who do not receive copies of their telephone bills do not have the opportunity to verify calls they made. Such verification provides an important protection against erroneous charges or misuse of the telephone system by unauthorized individuals.
- Employees certifying that they have identified all personal telephone expenditures

reimbursement of personal calls.

Requiring employees to sign each telephone bill certifying that they have identified all personal telephone expenditures provides impetus to employees to carefully monitor their telephone use.

- Providing a system for employees to reimburse the City for personal toll calls
 A system should be in place for employees to reimburse larger amounts to the City by
 check and smaller amounts to the department's petty cash fund in check or cash.
- Supervisors periodically reviewing employees' telephone bills
 While a monthly review of telephone bills is probably not necessary, supervisors
 should review employees' telephone bills at least once or twice a year to ensure that
 employees keep personal calls to a minimum and reimburse the City for them.
- Developing acquisition guidelines that outline the factors that should be evaluated prior to purchasing cellular telephones and managers should periodically review cellular telephone usage

Written guidelines for acquiring cellular telephones should establish the factors which should be considered in evaluating an employee's need for a cellular telephone. These factors should include (1) the costs of the cellular telephone, (2) the benefits resulting from having a cellular telephone, such as increased efficiency and safety/security for field workers, and (3) a comparison of cellular usage costs with alternative ways of communicating, such as pagers and radios. In addition, department managers should periodically review cellular telephone usage to ensure that the cellular equipment and services is still justified and that City funds continue to be used efficiently and effectively.

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⁷Department directors will have to establish for their department a workable definition of minimum that sets out at what level of usage would the department consider minimal and at what level would be deemed above minimum.

• Developing a system for regularly informing employees of the department's telephone policy (new employees at orientation and a reminder to all employees every 12 to 24 months)

Since employee cooperation is crucial to the City's success at limiting personal telephone calls, employees need to remain aware of their department's policy on use of City telephones and cellular telephones. Departments may want to have their employees review the department's policy on telephone usage and sign showing that they have read the policy and understand what the policy expects of them.

In addition, we recommend that departments:

• Designate a proficient telephone coordinator

Telephone coordinators serve as liaisons between the department and DAS. Departments should ensure that their telephone coordinators have the skills, authority, and time needed to perform their responsibilities effectively and to ensure that the departments' telecommunications needs are appropriately met. Proficient telephone coordinators can help their departments maximize the benefits obtained from the City's telephone system and identify misuse of City telephones.

Periodically conduct reviews of authorization codes, access levels, cellular telephone inventories

Departments should limit employees' authorization codes to geographic areas where that employee may have legitimate business needs. Unusual calls outside of an employee's access area can be placed by the City operator. Departments should reconcile cellular telephone inventories with DAS' cellular telephone inventory annually.

We also recommend that DAS:

• Constantly review and strengthen system controls to prevent illegal use of the City's telephone system

Since telecommunication fraud is pervasive and can quickly cost the City substantial amounts if the system is compromised, DAS should continue to remain vigilant about system security and aware of toll fraud problems. DAS should consider creating a system security team to regularly review and report on system security.

Prepare and distribute exception reports

DAS should explore the capabilities of its system to generate exception reports. These reports could flag telephones making an unusually high number of toll calls in a given month or multiple calls to the same number or other factors which could then identify suspicious bills for more thorough review by supervisors.

Department of Administrative Services Accomplishments8

DAS Meets the City's Telecommunication Needs

The DAS Communications and General Services Division (C&GS) was created in 1984 to handle the City's telecommunications needs in the era following the divestiture of AT&T. Divestiture impacted the City by requiring that all future acquisitions of non-regulated telecommunications services and equipment be made through competitive procurement processes.

The division provides a full range of telecommunications services, including telephone and related voice services, two-way radio systems, cellular phones and pagers and support for the transmission networks that deliver these and other services. The division has taken a strong leadership role in enhancing the City's telecommunications capabilities since its inception. A few of these efforts are highlighted below.

- The City's Internal Telephone System: Acquisition & installation of the City's telecommunications network and telephone system was completed in 1987. The results of this are:
 - **Introduction of new technology:** C&GS provides feature-rich voice system capabilities to City employees that enhances productivity and reduces operating costs to City departments, including automated attendant systems, automated call distribution systems, voice mail, etc.
 - **Efficiency:** According to DAS, the City's telephone system reduces costs for telecommunications services to the City is estimated at 20% under external service provider costs since 1987; and, phone rates have remained at the same nominal level since 1987.
- Exemplary customer service: C&GS division employees occupy the lead within DAS in receipt of employee recognition awards (DAS' Tools, Talent & Technology Awards).
- Innovation: Seattle was one of the first cities to install a fiber optic network to support voice communications, data communications & system control functions for Seattle City Light.

⁸Addendum prepared by DAS.

- **Customer support:** C&GS division staff were instrumental in the planning and implementation of computer-aided dispatch systems for the Police & Fire Departments.
- Excellence: The C&GS' Radio Communications Shop is recognized as the premier radio shop in the region, by both the public and private sector; an example of this excellence is the fact that in the move of SFD's Fire Alarm Center from the Seattle Center to its current location at Fourth & Battery, not a single 911 call was lost.
- Emergency Communications: C&GS' initiative in providing technical & political leadership is resulting in a regional emergency communications system, the 800 MHz trunk radio system, approved by King County voters through a \$57 million levy; this effort resulted in receipt of the 1993 Evergreen Association of Public Employees Award.
- Strategic Telecommunications Initiatives: C&GS staff have been actively involved in development of a transition plan for the City's own telecommunications networks toward integration of voice and data networks; C&GS staff are taking the lead in exploring options for early deployment of advanced telecommunications infrastructures (an information highway) for the Seattle community at large; C&GS staff also spearheaded an effort to enhance regional cooperation on telecommunications among all public organizations in the central Puget Sound area (the Regional Public Telecommunications Council); and C&GS staff are playing a critical role in the City's cable television refranchising efforts by supplying technical advice on provisions for a public institution network (I-NET).

City's Long Distance and Cellular Telephone Costs Between 1990 - 1993

Long Distance & Cellular Co.	1990	1991	1992	1993
Long Distance : US West, MCI, SCAN, AT&T and Others	\$332,120	\$286,812	\$310,963	\$343,246
Percent Increase/(Decrease)		(14%)	8%	10%
Average Per Employee (Employees with a SCAN code)				\$92
Cellular Telephone: Cellular One and US West Cellular	\$162,624	\$257,656	\$332,394	\$397,995
Percent Increase From Previous Year		58%	29%	20%
Average Per Cellular Telephone*				\$452
Total Telephone Costs	\$494,744	\$544,468	\$643,357	\$741,241
Total Percent Increase From Previous Year		10%	18%	15%

^{*} Based on 880 City cellular telephones reported by DAS.

Policy Considerations Regarding the Use of City Office Equipment

Each department is responsible for establishing and maintaining a system of management controls which provide reasonable assurance that City funds and City property are used for City purposes and safeguarded against loss or unauthorized use. However, the costs of management controls should not exceed the benefits. Activities which add little cost to the City, such as the use of computers or telephones for local calls, require fewer management controls, while activities, such as cellular telephones and long distance calls, which can present significant costs to the City, require more controls.

At the request of the Office of the Mayor, the Office of City Auditor has developed a sample policy statement on the use of City office equipment below and guidelines for the use and control of long distance and cellular telephone services in Addendum 4 to assist departments in developing their own policies on telephone usage. Each department will have to develop its own policies based on the unique requirements of the department. For some departments, a department-wide policy will probably work the best while for other departments, division-based policies will work better. Based on the department's situation, its policy may prohibit all use of office equipment for non-City purposes. Other departments may choose to provide more flexibility. We designed our sample policy statement and guidelines to: (1) provide maximum flexibility while meeting the needs of City departments, (2) remain within the City's Ethics Code, and (3) provide adequate accountability for City resources.

Departments may want to call the Office of City Auditor and/or the Ethics and Elections Commission for further advice on establishing policies.

Sample Policy on the Use of City Office Equipment

Use of City Office Equipment

The City provides telephones, cellular telephones, fax machines, computers, photocopy machines, and other office equipment to employees for conducting City business. In accordance with SMC 4.16.070(2)(b) and Seattle Ethics and Elections Commission opinions, the following usage of City equipment and telephone is appropriate:

- usage which supports policies contained in City ordinances and which a reasonable person would consider to be for City purposes;
- the activities of professional and governmental associations;

- personal calls due to a change in work schedule, an emergency, or other minimal⁹ personal tasks; and
- the minimal⁹ use of City equipment for non-profit charities.

The minor personal tasks referred to above should not infringe on employee's work schedule and should have a minimal⁹ impact on City equipment. If a cost is incurred by the City, the cost should be reimbursed by the employee. See Addendum 8 for information on setting reimbursement rates. City equipment and City paid time may never be used for political campaigns¹⁰ nor for conducting non-City business¹¹, except as mentioned above.

⁹Department directors will have to establish for their department a workable definition of minimal that sets out at what level of usage the department would consider minimal and at what level would be deemed above minimal. An example of this might be for a department to define minimal use for their office as 10 to 15 minutes per day, up to one hour a week, for the combined usage of all office equipment. The important element in defining minimal is setting some time per day and a total time that can be accumulated and used during a week. For some departments, minimal may be defined as zero.

¹⁰per RCW 42.17.130 and SMC 2.04.300

¹¹per SMC 4.16.070(2)(b)

Sample Guidelines for the Use of Long Distance and Cellular Telephones

We developed these sample guidelines to help departments in developing their policies and guidelines regarding the use of long distance and cellular telephone services. Departments' policies should, at a minimum, include: limiting direct dial access; requiring employees to verify their bills and reimburse for personal calls; directing managers and supervisors to periodically review employee telephone usage; and maintaining controls over cellular telephone inventory records. In our report's recommendation we provide additional items departments may want to consider in developing their policies.

Employees, supervisors, telephone coordinators, department managers, and DAS have the following responsibilities.

Employees responsibilities:

- Never use City equipment for outside business or for a political campaign.
- Reimburse the City for the use of City equipment for personal use.
- Refrain from incurring long distance and cellular telephone charges for non-City purposes. Charge non-City toll calls to a credit call or a home telephone.
- If it is necessary to place a long distance or cellular telephone call for non-City purposes, note making the call in a telephone log, calendar or comparable place to facilitate identifying personal calls on monthly telephone bill.
- Review telephone charges for accuracy and identify any erroneous or fraudulent charges.
- Indicate on telephone bills which calls were for non-City purposes and reimburse the City for those calls through the department's telephone coordinator.
- Sign each monthly telephone bill certifying that they have identified all non-City charges and reimbursed the City for personal calls and then provide the bill to their supervisor.
- Immediately notify the Department of Administrative Services (DAS) through their telephone coordinator if they suspect fraudulent use of their telephone.
- Do not allow friends and family members or private business contacts to call the cellular telephone except for emergencies.
- Employees who regularly have cellular telephone bills above \$125 should maintain a log of all calls, including time of call and its approximate length, to provide accountability and ensure the cellular telephone is used efficiently and effectively.

Supervisors responsibilities:

- Periodically (once or twice a year) review employees' telephone charges.
- Look for patterns which may suggest non-City use of telephones and to ensure that employees are properly identifying and reimbursing the City for non-City telephone usage.
- Ensure that all employees are aware of the department's policies regarding the use of City equipment and making non-City calls.

<u>Department's Telephone Coordinator responsibilities</u>¹²:

- Act as a liaison between DAS and their department.
- Coordinate all department requests for telephone equipment and services ensuring that requests have received supervisory review and approval.
- Review long distance and cellular telephone usage to ensure that use is appropriate and cost effective.
- Review authorization code restrictions with supervisors to ensure that levels of long distance authorization are limited to the requirements of employees' work.
- Review monthly telephone bills from DAS for undesirable trends, unusual
 increases in costs, and unexpected calling patterns. Notify DAS immediately if
 the possibility of telephone fraud has occurred.
- Train employees on features of the department's telephone system and the requirements of this policy.
- Maintain an accurate inventory of cellular telephones, showing the employee to whom the telephone is assigned.
- Maintain a current and accurate record of employees assigned a City credit card and SCAN number and promptly report any changes in such records to DAS.
- Periodically review with supervisors the distribution of cellular telephones to ensure that only employees with legitimate needs have a cellular telephone and that the cellular telephone is on the most cost effective cellular service calling plan.

Department management responsibilities:

- Ensure that unrestricted direct dial long distance capability is removed from all telephones.
- Ensure that access levels are limited to employees needed to carry out their job responsibilities.
- Ensure that new employees are aware and that other employees are periodically reminded of the department's policy on the use of City equipment and telephones.
- Ensure that the telephone coordinator has the skills and sufficient time to effectively perform their tasks.

¹²Each department should appoint a telephone coordinator who is accountable to appropriate department management for matters and decisions related to telecommunications.

DAS responsibilities:

- To provide timely customer service, network reliability, and cost effective telecommunications services to departments.
- Ensure that departments receive their telephone bills timely.
- Submit a copy of the cellular telephone inventory to each department at least annually, so departments can maintain an accurate inventory of cellular telephones and reconcile inconsistencies.
- Prepare exception reports which alert department management to unusual telephone activity.

Addendum 5

Comparison of DAS' and City Departments' Cellular Telephone Inventory

Department	Cellular Phones Reported by DAS	Cellular Phones Reported by Dept	Cellular Phones Reported by Dept and DAS	Cellular Phones on DAS' List only	Cellular Phones on Depts' List Only	Total Cellular Phones Reported
Bumbershoot	0	0	0	0	0	0
City Light	260	259	251	9	8	268
Civil Service Commission	0	0	0	0	0	0
DAS	148 ¹³	96	69	79	27	175
DCLU	30	29	29	1	0	30
DHHS	14	14	13	1	1	15
Engineering	129	108	103	26	5	134
Ethics & Elections	0	0	0	0	0	0
Executive						
Economic Dev.	0	0	0	0	0	0
Intergovt. Relations	3	3	3	0	0	3
Mgmt & Budget	0	0	0	0	0	0
Mayor's Office	6	5	5	1	0	6
Women's Rights	0	0	0	0	0	0
Finance	0	0	0	0	0	0
Fire	44	50	40	4	10	54
Hearing Examiner	0	0	0	0	0	0
Human Rights	0	0	0	0	0	0
Law	0	0	0	0	0	0
Legislative	0	0	0	0	0	0
Library	2	2	2	0	0	2
Lic. & Consumer Affairs	1	1	1	0	0	1
Municipal Court	4	3	3	1	0	4
Neighborhoods	1	1	1	0	0	1
Parks and Recreation	42	45	42	0	3	45
Personnel	0	0	0	0	0	0
Planning Commission	0	0	0	0	0	0
Planning Department	0	0	0	0	0	0
Police	80	85	71	9	14	94
Police Pension	0	0	0	0	0	0
Public Safety Service	0	0	0	0	0	0
Retirement System	0	1	0	0	1	1
Seattle Arts Commission	0	0	0	0	0	0
Seattle Center	11	11	10	1	1	12
Water	105	87	73	32	14	119

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¹³DAS' cellular telephone inventory includes 44 idle telephones (e.g., inventory spares or telephones in repair) and 7 lost or stolen telephones, according to DAS officials.

Total	880	800	716	164	84	964
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Examples of Written Policies On Telephone Usage

This addendum includes the following:	
1. Seattle Water Department's Telephone Usage Policy	29
2. Seattle City Light's Policy on the Use of Cellular Phones	30
3. Department of Housing and Human Services' policy on Cellular Phones	31

Additional Information For Developing Policies and Guidelines

This addendum includes the following:	
1. City of Seattle Ethics and Elections Commission's Memorandums	33
2. Association of Washington Cities' Guidelines on Cellular Telephones	37
3. Excerpts from City Charter and City Ordinances	40

Reimbursement Rates

City Ordinance 106454 established the following fees to be charged for copies or extracts from City books and records:

First page of any one document	\$0.25
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Each succeeding page of such document 0.10

However, the ordinance allows heads of departments to establish prices for copies of specific documents that recoups the cost of preparing such copies, but does not exceed the amount necessary to reimburse the City for costs of reproducing such documents.

In developing reimbursement rates, departments may want to consider the following:

Copies, Faxes, Printing on Laser or Dot Matrix Printers

Departments may want to determine a reimbursement rate that (1) recoups the City's costs and (2) does not encourage use. DAS' Photocopy and Records Management has set its rate for personal copies at 4 cents a page and to send faxes at \$1.25 a page. It does not charge employees for incoming faxes since the cost is slight and employees may receive unsolicited faxes.

Long Distance Telephone and Cellular Service

To recoup the City's costs, departments should charge, at a minimum, \$ 0.21 a minute for long distance and \$ 0.38 a minute for cellular. Departments may want to charge higher rates to discourage personal use. (Long distance rates were calculated at the SCAN rate of 17 cents a minute plus DAS' 22 percent administration charge. For cellular telephones, rates were calculated at Cellular One's rate of 28 cents a minute plus DAS' administrative charges and taxes.)

Computers

Departments could charge a fee for the personal use of computers to discourage personal use. Employees should use City disks and City software to protect City computers from computer viruses or the illegal use of copyrighted materials. Otherwise, virus detectors should be installed. In setting a reimbursement rate, Departments may want to consider that Kinko charges \$10 an hour and The Computer Workshop charges \$15 an hour. Employees should use City computers at their home only for City business.